

## ***Grant Mackay Company Variance Request***

**1. Initial Variance Request**

**2. The purpose of variance request:**

c. to relieve or prevent hardship of a kind other than provided for in 2.a or 2.b

**3. Describe the business or activity for which the variance is requested. List all past, present, and future businesses and activities.**

Grant Mackay Company, Inc., a local demolition and excavation contractor has been contracted by Okland Construction to demolish portions of Block 76 in Salt Lake City. Part of our demolition is to demolish and remove the Key Bank Tower. The Key Bank Tower is a 20 story office and mall plaza building located on the eastern side of Block 76. The tower is made up of 16 floors of office space and 4 floors within the Crossroads Plaza Mall. The tower is structural steel frame construction with concrete floors.

The removal of the tower will provide space for the new mall and retail shops on Block 76.

**4. Describe the emission unit or process equipment or other units/equipment involved in the request. This question is not applicable to our request, but I have given some basic background information in the implosion process.**

To prepare for the implosion, Grant Mackay will engage in selected interior demolition which will be contained by the exterior skin of the building. Grant Mackay will remove selected interior and exterior non-load bearing walls, equipment, pipe, conduit, duct work, suspended ceilings, elevator cars/rails ect. on the lower level (elevation 4332), mall level 2 and tower level 7. We will remove the resultant debris, leaving clean columns and reasonable clean floors. We will remove any encasement from selected structural steel columns, leaving clean steel surfaces for subsequent burning/torching operations and explosives placement. After the implosion occurs, large trackhoses will separate and load the material into our end dumps for proper disposal

The selective demolition work will be unknown or out of sight to the public. All preparatory work will be contained within the building prior to implosion.

**5. State the rules or permit conditions (identify whether Approval Order or Title V) from which the applicant seeks relief.**

The relief that we are seeking does not fall under the Approval Order of Title V. We are seeking relief of the dust standards. Specifically, we are seeking relief from Utah Administrative Code Rule R307-309-5 which states:

- (1) Except as provided in (2) below, opacity caused by fugitive dust shall not exceed:
  - (a) 10% at the property boundary; and
  - (b) 20% on site
- (2) Opacity in (1) above shall not apply when the wind speed exceeds 25 miles per hour and the owner or operator is taking appropriate actions to control fugitive dust.
  - (a) If the source has a fugitive dust control plan approved by the executive secretary, control measures in the plan are considered appropriate.
  - (b) Wind speed may be measured by a hand-held anemometer or equivalent device.
- (3) Opacity observations of emissions from stationary sources shall be conducted in accordance with EPA Method 9. For intermittent sources and mobile sources, opacity observations shall use procedures similar to Method 9, but the requirement for observations to be made at 15-second intervals over a six-minute period shall not apply.

**6. State the specific time period(s) for which the variance is requested.**

Based on our latest schedule, we are looking at either July 29<sup>th</sup> or August 5<sup>th</sup> 2007. The implosion will occur at first light Sunday morning.

**7. State why compliance with the rule or approval order from which variance would produce serious hardship without equal or greater benefits to the public. If financial hardship, include itemized and total costs of compliance.**

Our number one reason for selecting the implosion process is safety. We can safely bring this 20 story steel structure down by a minimal amount of interior selective demolition and strategically placing explosive charges to trip the building and have it fall just outside its footprint towards the Southwest. Because this building is a steel structure, it would require that the building be dismantled in the similar way it was constructed. Each structural member of steel will have to be torched and have a crane lower the piece to the ground. The concrete slabs will have to be broken by mechanical means and the rubble would be removed from the floor (either by the elevator shaft or off the exterior of the building).

This method will require our people to be exposed to great heights, the risk of crane failure in dismantling the building, and allowing equipment on the building slabs. One of the most dangerous conditions of the demolition of the building would be to remove the exterior skin. This is not the safest way to bring this building down. This would also require the building demolition to take an additional four to five months in the schedule. This would also cost an additional \$800,000 to \$1,000,000 in expense.

**8. List all possible alternatives in lieu of obtaining a variance. Discuss the advantages and disadvantages for each alternative. A cost estimate for each alternative must be included.**

The disadvantage in demolishing the tower by mechanical means is stated in Number 7. There is decreased safety to our workers, additional time and additional funds required. Our proposal is based on imploding the structure. The advantages of imploding the building are the following:

- a. Minimal outside disturbance in prepping for the implosion
- b. A significant increase in safety to our workers
- c. A 4-5 month increase in schedule. The Key Bank Tower is the critical path for mass excavation and beginning the structural concrete. Based on our proposals, mass excavation really begins after the Key Bank Tower is removed. This would hurt Block 76 as a whole.
- d. There is a significant cost saving to the owner by implosion. The owner would save \$800,000 to \$1,000,000.
- e. The disturbance to the public will be for approximately 10 minutes vs. 4 or 5 extra months.
- f. Salt Lake City would receive national attention (in a good way) for imploding a 20 story building.
- g. We have hired the best implosion firm in the country to do this work.

**9. State the advantages and disadvantages to nearby residents if the variance is granted.**

The main advantage of the implosion process is that it will occur early Sunday morning where there will be very little traffic or business/tourist activities. Also, most of the immediate surrounding area is business related (Marriott Hotel is a little different in the fact that they have overnight guests). The actual implosion would only last less than a minute. There is going to be a dust plume resulting from the blast, but it is a one-time event versus constant dust for 4 to 5 months.

**10. State how the applicant will reduce excess emissions to the maximum extent feasible during the period the variance is in effect.**

There is no way to control the dust plume during the implosion. There will be some relief by removing some soft demolition on the blast floors. After speaking with our implosion contractor, there have been other test methods to control the dust during the implosion such as creating a mist or curtain of water. This method has proven to be of little help and also creates a bigger cleanup problem because now you have mixed water with dust.

We have contacted the city streets department to assist in the cleanup after the implosion. In addition to our crews, we feel that we can cleanup whatever dust that enters the streets within 4 hours. We will also cover all HVAC systems within the dust impact zone and will coordinate the window cleaning with adjacent buildings within the dust impact zone.

11. State the facts showing why operations under such variance are not likely to cause a nuisance, as defined in 76-10-803, Utah Code Annotated.

**76-10-803. "Public nuisance" defined -- Agricultural operations.**

(1) A public nuisance is a crime against the order and economy of the state and consists in unlawfully doing any act or omitting to perform any duty, which act or omission:

(a) annoys, injures, or endangers the comfort, repose, health, or safety of three or more persons;

(b) offends public decency;

(c) unlawfully interferes with, obstructs, or tends to obstruct, or renders dangerous for passage, any lake, stream, canal, or basin, or any public park, square, street, or highway;

(d) is a nuisance as defined in Section 78-38-9; or

(e) in any way renders three or more persons insecure in life or the use of property.

(2) An act which affects three or more persons in any of the ways specified in this section is still a nuisance regardless of the extent to which the annoyance or damage inflicted on individuals is unequal.

(3) (a) Agricultural operations that are consistent with sound agricultural practices are presumed to be reasonable and do not constitute a public nuisance under Subsection (1) unless the agricultural operation has a substantial adverse effect on the public health and safety.

(b) Agricultural operations undertaken in conformity with federal, state, and local laws and regulations, including zoning ordinances, are presumed to be operating within sound agricultural practices.

Amended by Chapter 183, 2002 General Session

Our variance request is not applicable to this Utah Code.

12. **The source is located in: An Attainment Area.**

**If located in an attainment area, give the exact location of the activity or business for which variance is sought. Will emissions resulting from the approval of the variance cause a new violation of the National Ambient Air Quality Standards? Address the impact on increment consumption for the area and also address the possible impact on Class 1 areas.**

The Key Bank Tower is located at 50 South Main Street, Salt Lake City, Utah.

Will this cause a new violation of standards???????

## **National Ambient Air Quality Standards (NAAQS)**

The [Clean Air Act](#), which was last amended in 1990, requires EPA to set [National Ambient Air Quality Standards](#) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. **Primary standards** set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. **Secondary standards** set limits to protect public welfare, including protection against decreased

visibility, damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants. They are listed below. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air ( $\text{mg}/\text{m}^3$ ), and micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ).

## National Ambient Air Quality Standards

Pollutant	Primary Stds.	Averaging Times	Secondary Stds.
Carbon Monoxide	9 ppm (10 $\text{mg}/\text{m}^3$ )	8-hour <sup>(1)</sup>	None
	35 ppm (40 $\text{mg}/\text{m}^3$ )	1-hour <sup>(1)</sup>	None
Lead	1.5 $\mu\text{g}/\text{m}^3$	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 $\mu\text{g}/\text{m}^3$ )	Annual (Arithmetic Mean)	Same as Primary
Particulate Matter ( $\text{PM}_{10}$ )	Revoked <sup>(2)</sup>	Annual <sup>(2)</sup> (Arith. Mean)	
	150 $\mu\text{g}/\text{m}^3$	24-hour <sup>(3)</sup>	
Particulate Matter ( $\text{PM}_{2.5}$ )	15.0 $\mu\text{g}/\text{m}^3$	Annual <sup>(4)</sup> (Arith. Mean)	Same as Primary
	35 $\mu\text{g}/\text{m}^3$	24-hour <sup>(5)</sup>	
Ozone	0.08 ppm	8-hour <sup>(6)</sup>	Same as Primary
	0.12 ppm	1-hour <sup>(7)</sup> (Applies only in limited areas)	Same as Primary
Sulfur Oxides	0.03 ppm	Annual (Arith. Mean)	-----
	0.14 ppm	24-hour <sup>(1)</sup>	-----
	-----	3-hour <sup>(1)</sup>	0.5 ppm (1300 $\mu\text{g}/\text{m}^3$ )

<sup>(1)</sup> Not to be exceeded more than once per year.

<sup>(2)</sup> Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual  $\text{PM}_{10}$  standard in 2006 (effective December 17, 2006).

<sup>(3)</sup> Not to be exceeded more than once per year on average over 3 years.

<sup>(4)</sup> To attain this standard, the 3-year average of the weighted annual mean  $\text{PM}_{2.5}$  concentrations from single or multiple community-oriented monitors must not exceed 15.0  $\mu\text{g}/\text{m}^3$ .

<sup>(5)</sup> To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35  $\mu\text{g}/\text{m}^3$  (effective December 17, 2006).

<sup>(6)</sup> To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

<sup>(7)</sup> (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is  $\leq 1$ , as determined by appendix H.

(b) As of June 15, 2005 EPA revoked the [1-hour ozone standard](#) in all areas except the fourteen 8-hour

ozone nonattainment [Early Action Compact \(EAC\) Areas](#).

**13. Is the variance request considered an emergency situation? NO.**

**14. Are other regulatory agencies or permit authorities involved in the variance request?** Yes. I believe that Salt Lake City will have some say in the matter in granting us our demolition permit. The person that we are dealing with is Lisa Schaffer of Building Services and Business Licensing, Phone Number – 801-535-7752.